

WHAT IS CLAIMED IS:

1. Apparatus for capturing energy from surface waves on a body of water comprising first and second floats, each having an intercept with the water surface, a power take-off element connected between said floats for converting relative movements therebetween into useful energy, and wherein said first float is configured to rise and fall in in-phase relation with passing surface waves, and said second float is configured to rise and fall in out-of-phase relation with said passing waves.

2. Apparatus according to Claim 1 wherein said first and second floats have configuration values g/Z which are greater and less than ω^2 , respectively, where:

g = acceleration due to gravity;

Z = the effective depths of the floats; and

ω = the angular frequency of the passing waves; and where:

$Z(\text{effective depth}) = V_D/A_s$, where:

V_D is the volume of the water displaced by the float including hydrodynamic added mass; and

A_s is the waterplane area of the float.

3. Apparatus according to Claim 2 when the value of g/Z for said first float is greater than 0.63 sec^{-2} and the value for g/Z for said second float is less than 0.63 sec^{-2} ; and the value of Z for said first float is less than 15.9 meters and the value of Z for said second float is greater than 15.9 meters.

4. Apparatus according to Claim 1 wherein said first float is

configured as a circular member including an annular rim enclosing a central opening, and said second float is configured as an elongated spar.

5. Apparatus according to Claim 4 wherein said spar is disposed centrally of said circular member for vertical movements relative to said first float in response to passing surface waves.

6. Apparatus according to Claim 5 wherein said spar is in sliding contacting relationship with an inner surface of said annular rim for controlling the relative angular positions of said spar and said rim during said relative vertical movements between said spar and said circular member.

7. Apparatus according to Claim 6 wherein said sliding contacting relationship is such as to provide a fixed angular relationship between said spar and said circular member for all relative vertical positions therebetween.